

Notice of Allowability

Applicati n No.

09/321,518

Examin r

Wai-Sing Louie

Applicant(s)

GILTON ET AL.

Art Unit

2814

-- ***The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/29/03.
2. ☒ The allowed claim(s) is/are 39-56.
3. ☒ The drawings filed on 27 May 1999 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |

DETAILED ACTION

The argument in the appeal brief filed 9/29/03 has overcome the rejection of the previous office action. The finality is withdrawn.

Allowable Subject Matter

Claims 39-56 are allowed. The following is an examiner's statement of reasons for allowance:

The claimed invention is an apparatus for cleaning semi-conductor wafers, the wafers having first and second wafer side surfaces, the apparatus comprising:

- A chamber sized to receive at least one wafer to be cleaned;
- A solvent applicator coupled to the chamber and adapted to vaporize and apply a solvent to at least one of the first and second side surfaces of the wafer positioned within the chamber so as to form a film of liquid solvent on said at least one of the first and second wafer side surfaces, the liquid solvent being inert to said at least one of the first and second wafer side surfaces;
- A temperature controller positioned and operable to maintain the at least one wafer at a temperature equal to or lower than about a dew point of the solvent;
- A gas source of at least one reactive gas coupled to the chamber so as to deliver such gas to the chamber, the at least one reactive gas being selected to chemically react with the surface of the wafer to clean the wafer; and wherein

- The liquid solvent comprises a transport medium which carries at least some of the at least one reactive gas through the film to said at least one of the first and second wafer side surface, where the at least one reactive gas chemically reacts with said at least one of the first and second wafer side surfaces.

Reference McNeilly et al. (US 5,762,755) do not disclose the solvent applicator. The cooling coils 59 in McNeilly's device allows to control the temperature of the wafer in the chamber, but does not specify to cool the wafer down to dew point of the liquid solvent and the hot vapor inlet 18 does not apply liquid solvent to the chilled wafer surface as disclosed in claim 1.

Reference McConnell et al. (US 4,795,497) do not disclose a temperature control in the cleaning chamber to chill the wafers down to the dew point of the liquid solvent. Without the temperature control, the liquid solvent does not form condensate on the wafer.

Therefore, the above references do not disclose the claimed invention of present application and claims 39-56 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

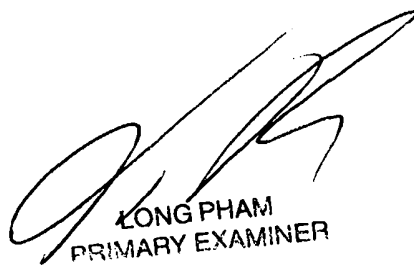
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Wsl

November 21, 2003.



LONG PHAM
PRIMARY EXAMINER